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# AMSTRAD ACTION

ISSUE No. 111  
DECEMBER 1994  
£2.95

## DEAR SANTA...

*Find out what to ask for this Christmas with our guide to the best software and hardware!*

### MegaBlasters - Full Review!

### The Future of Europe's PD scene!

CPC 464, CPC 6128, CPC 464 Plus  
DECEMBER 1994 **SERIOUS**

## ACTION

## D.E.S. DEMO

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## REGULARS

### 3 Reaction

The old 'Let's ditch the covertape' debate rages on, and there's news about Amstrad Action's new on-sale date.

### 4 Amscene Directory

All the company names, phone numbers and addresses you could ever want...

### 7 Back Issues

Is your collection of Amstrad Actions missing that one essential issue? Well, you know what to do, don't you? Yep, trip along to the Back Issues page and get yourself a bargain!

## SERIOUS STUFF

### 10 Basically Basic

This month we take you through the mysteries of ARRAYS - what they are, why they're useful and how they can help you to create your own game!

### 21 Techy Forum

Richard Fairhurst steps on to the ward of the insane CPCs, practising his bedside manner and attempting to diagnose all manner of techy problems.



### 12 Cover feature: Dear Santa...

Fed up of fluorescent socks, cheap 'n' tacky aftershave and ugly porcelain ornaments? Well, check out our guide to the ultimate CPC software and hardware - we guarantee you'll have a happy New Year!

## LEISURE ZONE

### 8 Cheat Mode



With more POKES than the average pig, these pages are the place to be for all would-be game champs.

### 20 Review: MegaBlasters

This huge, playable Super Bomberman clone receives the full review treatment this month. Don't miss it!



### 15 Interview: WACCI Talk

David Crookes talks to WACCI's new controller Paul Derryhouse, and discovers why the group is still going strong after eight years.



### 18 Reviews: Public Image

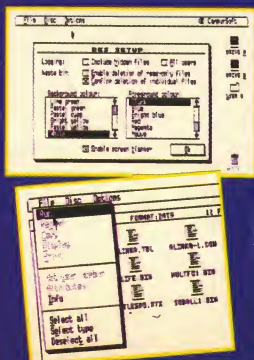
More Public Domain reviews than you can shake an extremely large stick at, plus the future of Europe's Public Domain scene. It's all here!



## Check out what's on this month's covertape...

### D.E.S.

This is it! The CPC's answer to Windows! It's taken the whole Amstrad scene by storm! And now you can sample its wonders for yourself.



### DOS Copy

If you're one of those people who uses a PC as well as a CPC, you're going to love this program, because DOS Copy makes it easy to transfer files between the two machines.



### Breakdown

A PD version of Breakout, would you believe? And darned good it is too.

### Minesweeper

This is one of the best computer games of all time. Try to find the bombs concealed beneath the tiles without getting blown up. Tricky, but fun.

### Logistic

Even more PD puzzling action.

TURN TO  
PAGE 5  
FOR FULL  
DETAILS

# Reaction

## Reel fun!

I thought I would write concerning the article in issue 109 about 'getting shot of the covertape.' I, for one, would be glad if you kept the covertape, as I enjoy many great hours playing the games and learning from the software on each tape.

I'm a relatively new reader of AA (since April this year) - I didn't know there was an Amstrad magazine available before that. I think it's a very good mag, and am pleased that someone is still writing about the old faithful Amstrad.

Mr B Stant, Moreton-in-Marsh

Ah, yes. If you recall, there was due to be a phone-in on Thursday 29 September. You know, the one where you were supposed to register your votes about whether the covertape should stay or go. But, as a lot of you found out, there was nobody manning the phones that day. Sorry about that. The mix up came about because Dave had moved off the mag by that time, and I still hadn't been appointed.

But from the letters we've received so far (complaining that they couldn't get through), the general opinion seems to be that you want the tape to stay. But not everybody's happy about the state of the tape, as the following letter shows... Karen

days of trying every method I've ever heard of. Why mess around with tried and trusted methods of disc transfer?

R Plumb, Hayes

Oops, sorry about that, R. The reason the disc transfer system changed was because we started using different people to create the tape masters. There were a few teething problems, but these have been sorted out now. Touch wood!

As to the Turbo the Tortoise, look out for a listing to all your woes in an up-coming Techy Forum. Karen

## Make a date

Why does every issue of Amstrad Action seem to come out later and later each month? At this rate, it'll soon go on sale in the month it says on the cover!

Pete Simmons, Doncaster

Oh no! Not more apologies - what have I gotten myself into here? The trouble all started when Dave, the previous editor, decided to leave. He was a bit hard to replace, you see (rumour has it, Bristol Zoo was all out of chimps during September). Seriously, though, there was a period between Dave's leaving and my joining. This meant it was a bit of struggle to get AA out for a while, which subsequently meant a few issues went on sale very late. But now I'm here



full-time things should get back to normal. So, expect to see us on the news stand during the last week of the month. Well, for the next couple of months, at least. Karen

## Slimfast plan

Oh dear. Amstrad Action 110. Smaller again. And what has happened to the quality of the paper on the cover? You try getting the tape off without ripping it.

It's a shame to see AA go this way, especially when features like the education one start to make an appearance. It shows the CPC still has a place in a world stuffed full of overpriced consoles and PCs. Good stuff!

Pity the adventure column is so stuck in a rut, though. If the magazine is supposed to be 'leaner and meaner' get rid of boxes that say the same thing every month and put in some reviews of newer adventures. They do exist, you know.

Andy Grey, Sevenoaks

You think the number of pages is small now? Have you seen the number of staff recently?

Seriously, the mag may be a mere shadow of its former self in terms of size, but we are still committed to producing the best magazine we can within a very tight budget and time scale. So any practical suggestions on the direction the mag should take would be welcome. Are the regular features (The Examiner, Basically Basic, Cheat Mode, etc) the most important things in the mag? Or would you prefer more features and reviews? Let us know - then we can bring you the mag you want! Karen



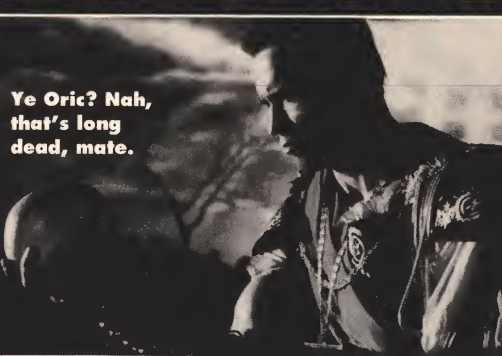
## Alas poor Oric...

I've been reading your mag for a few months now, and generally find it to be very good (Generally? - Karen). However, you seem to have been suffering from delusions of grandeur recently, and have been making some very unwelcome comments.

Many of the people who still use their 8-bit computers are enthusiasts and own more than one make of machine. Dave's attempts to relate computers to pop groups was most offensive. If you'd said the Spectrum was the Beatles, then it might have been fair to compare the Oric to the Monkees. The attempted comparisons in the mag were, however, widely inaccurate and another miserable attempt to make the CPC appear to have more prestige.

You just don't realise that a lot of us were around when the whole computer thing was taking off (it did not start in 1985). It would be nice if you could give other machines the credit they deserve.

Sinclair's machines brought computers into the home. Oric was largely responsible for the



Ye Oric? Nah, that's long dead, mate.

sound facilities and a form of BASIC that is far better than the 64. Are you getting the picture yet?

Please stop writing such puerile garbage and get on with writing about the Amstrad.

Steve Marshall, Edinburgh

Oh, come on. Of course we champion the Amstrad. This is Amstrad Action, after all. Having said that, though, I should point out that the comments made about the other machines were intended to be tongue-in-cheek - and, let's face it, we're never exactly slow to take the mickey out of Amstrad and CPCs as well. Loosen up, Steve - we do love the 8-bits, even the more obscure makes.

We also acknowledge the part they played in the home micro revolution. But you have to admit that some were bigger players than others - the Spectrum certainly deserves its place in the history books. But the Oric? Hmm, not convinced about that one. Yes, its keyboard's scrummy, but it was hardly revolutionary material. Anybody know how many were sold? Have you got enough fingers to count them? Karen





# Amscene

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## The Eliminator

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## CPC Undercover

☒ 37 Trimmingham Drive, Brandlesholme, Bury, Lancashire  
 A technically minded fanzine that's also on the look out for writers.

## User Groups

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## WACCI

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CPC 464, CPC 6128, CPC 464 Plus  
 DECEMBER 1994

# SERIOUS ACTION

## D.E.S.

### DESKTOP ENVIRONMENT SYSTEM

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PLUS PD UTILITY  
 DOS COPY

# D.E.S. DEMO

By Michael Beckett for Campursoft

This is a cut-down version of the acclaimed graphical user-interface (front-end to you and me) from the Glaswegian indie software company, Campursoft. The first thing we should point out about this demo is that you need to run it from disc. Once you've

transferred it, though, you can use the cursor keys to move the pointer around the screen, using Enter or Space to 'click on' (that's techy talk for select) an icon or menu.

What's missing? Well,

there's no ROM access feature, most of the File menu options are unselectable, you can't verify or copy a disc, and you can't format to either of the high-capacity ROMDOS/ParaDOS formats.

However, you can still use D.E.S. as a simple way to run programs – including D.E.S. applications.

The demo requires 128K – although should you decide to buy the ROM version from Campursoft, that'll work on any machine.

## DOS Copy

By Andreas Strojczek

Better known as Face Hugger, Andreas's utility is possibly the most useful PD proggy you'll ever come across in these days of PC world domination. But, as with D.E.S., you need to transfer it to disc in order to run it. In brief, DOS Copy enables you to copy files between PC and CPC discs. You'll need a 3-inch and a 3.5-inch drive.

Everything is menu operated, so you shouldn't have too much trouble finding your way around. Use

cursor keys to move the highlight bar, and ENTER to select. When it comes to copying files, move the bar on to the file you want to copy, and press SPACE. Repeat this for as many files as you want to copy, and then press ENTER to do the business.

DOS Copy is a shareware program, so get your shillings out and pay Andreas what he's due.

## Logistic

By Fraggie of MOPS

This is one of the finest offerings from the unchallenged kings of the puzzle game, Germany's MOPS group. You'll be playing another human or the computer on an eight-by-eight board.

You place a coin down on any square, and the other player will do the same (your coins are of different colours). Each square can hold up to four coins of one colour only. Try to put a fifth on, and crash... the coins are distributed over the four immediately adjacent squares.

Easy so far. Now, if one of the adjacent squares contains three coins belonging to the other player, making one of your coins overflow on to it will turn all of those coins into yours. And, of course, if one of your coins overflows on to a square with four coins already on it, it will set off a chain reaction that makes that square overflow as well...

You can use joystick or cursor keys. The menu (SPACE to start) enables you to configure which controls you use, the number of

players (none to two), how many games you'll play in a series, what the squares look like, and what sort of game you'll play (whether you have to cover the entire board, wipe out the other player, or simply have the upper hand after a set number of moves). All of which should keep you happily puzzled for the next three months.

Logistic is shareware, so if you like the game, the author asks you to send him a few Deutschemarks.

## Tape to disc offer

Dave must have been going quietly insane during his last few months – what else could explain the strange statement that there are no more discs left? Alex has an ample supply of discs, so if you want a disc version of this month's covertape simply cut out the coupon below, chuck it in an envelope along with your name and address and a cheque or postal order for £2 made out to Alex Audio Video, then send the whole lot to:

**AA111 Disc Offer, Alex Audio Video, Harcourt, Halesfield 14, Telford, Shropshire TF7 4QD**

If you're after discs for AA109 and AA110 send the appropriate coupon, to the address above – but alter the first part to AA109 or AA110.

## Loading troubles?

We make the greatest efforts to ensure our covertapes work properly, but if your tape isn't loading properly, pop it in the post (with an SAE and note telling us your name, address, type of CPC, and a brief description of the problem) to the address above.

## Disc 109 Token

## Disc 110 Token

## Disc 111 Token

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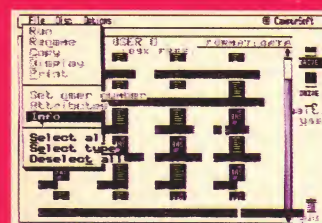
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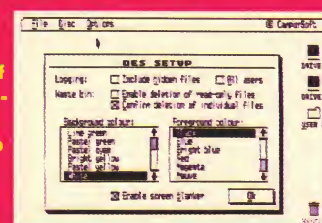
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## Breakdown

By Andre Schroeder

This is an absolutely excellent German PD Breakout game. The aim is the same as in every other Breakout game – batter down the wall by bouncing a ball off your bat, which you can move left and right.

There are a few differences, though. For instance, this particular version contains tons of fun power-ups, 40 levels and a level designer – which enables you to load and save your levels for future use – and all in all, it's as good as any commercial clone you'll see. Breakdown requires a joystick.

## Minesweeper

By Richard Fairhurst

Since Microsoft included it with their Windows graphical operating system for PCs, Minesweeper has become

one of the most popular games on computers worldwide. It's easy to see why – it's one of those infuriatingly simple and addictive little ideas that'll keep you thinking for hours.

You start off by selecting one of three differently sized grids. These grids are made up of tiles that conceal either a bomb or nothing at all. Your aim is to put a bomb marker on top of all the tiles concealing a bomb, while uncovering all the tiles with nothing underneath – without getting blown up in the process.

The only way you have of knowing what's where is by looking at the tiles with nothing underneath – they contain a number that shows how many of the adjacent tiles are hiding bombs.

Use the arrow keys to move your cursor, press COPY to mark a tile with a bomb symbol, and press ENTER or SPACE to uncover a tile. Do it as quickly as you can and you might get on the high-score table. But be warned: uncover a bomb and it's game over!



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# Cheat mode

Another month rolls by and as Christmas approaches, one thought is common to all the people of the world: 'Aaahhhh! where did December come from?'

## ELITE

Some double dealing now, as Simon McDowell and David Henry put their heads together to bring us these tips for Elite.



Down the plughole of life!

Buy your cargo and select your planet. Exit space dock and press H to go into hyperspace. When you come out of hyperspace, press delete to pause the game and then press F1 to exit.

Now make sure you don't have a tape deck plugged in, and go to 'load commander'. Select 'save commander', then save the commander as spock. Now exit and start the game. If all's gone well, you'll be in the space dock at the planet that you selected.

## ARKANOID: REVENGE OF DOH

While loading this game, hold down the E, R, F, I, J and O keys and the border will change colour. Then start the game and hold down the CTRL, SHIFT and ESCAPE keys to open the side walls to the next level. That one was penned by Robert Knight from Quay Deeside, Clywd.

## PUZZNIX

Carl Thomas of Barry in South Glamorgan is my favourite friend at the minute. Why? Because he

keeps sending in cheats galore, that's why! Not content with multiface pokes, he's also sent in some passwords for the PD clone of Puzznic, Puzznix. Happy block shifting!

Levels 10-19 MATRIX  
Levels 20-29 HITECH  
Levels 30-39 SHADOW  
Levels 40-49 ACTION  
Levels 50+ TECHNO

## IKARI WARRIORS

David O'Shea from County Cork in Ireland is a newcomer to Cheat Mode, but with tips of this quality, he's welcome to stay. His first effort is a comprehensive poke for that covertape blaster, Ikari Warriors. Cheers, David, don't get shy now - send some more in.



Little Boy Blue...

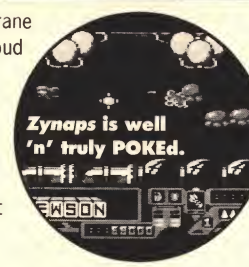
JAAH 10.'.' IKARI-WARRIORS (Cover-Tape .41)  
HAGI 20.'.' Cheat-and-transfer  
DBOE 30.'.' The-cheat-will-work-on-both-tape-and-disc-transfer  
GAJO 40.'.' By-David-O'Shea--1994  
AAMK 50.'.'  
LAHH 60-MODE-1:CALL-&BC02:SYMBOL-AFTER-256:CALL-&BB4E  
MAID 70-1\$=CHR\$(15)+CHR\$(3)+STRING\$(27,154):PRINT-TAB(7)1\$  
OAMG 80-RESTORE-320:READ-a\$:PEN-2:PRINT-TAB(7)a\$:PRINT-TAB(7)1\$  
CBGF 90-PEN-1:PRINT:FOR-a=1-TO-3:READ-a\$:PRINT-TAB(9)CHR\$(10)a;CHR\$(8)".-."a\$

:NEXT  
GAEB 100-WHILE-INKEY\$<"":WEND  
JADJ 110-a=VAL(INKEY\$):IF-a<1-OR-a>3-THEN-110  
JAAE 120-IF-a=1-THEN-380:ELSE-IF-a=2-THEN-220  
GAIL 130-LOCATE-1,4:PRINT-CHR\$(20)  
PAAF 140-FOR-a=1-TO-6:READ-a\$:PRINT-TAB(9)CHR\$(10)a;CHR\$(8)".-."a\$:NEXT  
ABHF 150-y\$=CHR\$(15)+CHR\$(2)+CHR\$(1)+CHR\$(6):n\$=CHR\$(15)+CHR\$(3)+CHR\$(1)+CHR\$(21)  
PAPC 160-DIM-c(5):FOR-a=1-TO-5:LOCATE-32,4+a\*2:PRINT-n\$:c(a)=0:NEXT  
GALB 170-WHILE-INKEY\$<"":WEND  
JAEK 180-a=VAL(INKEY\$):IF-a<1-OR-a>6-THEN-180  
EAAE 190-IF-a=6-THEN-220  
BBFM 200-c(a)=NOT-c(a):LOCATE-32,4+a\*2:IF-c(a)=0-THEN-PRINT-n\$:ELSE-PRINT-y\$  
CAFK 210-GOTO-180  
DAOO 215.'.'Run-game  
PAFM 220-MODE-0:BORDER-2:OPENOUT"d":MEMORY-4799:LOAD"likari.bin"  
HANG 230-IF-c(1)=-1-THEN-POKE-&6B20,&B7  
HAOH 240-IF-c(2)=-1-THEN-POKE-&6B98,&B7  
HAJG 250-IF-c(3)=-1-THEN-POKE-&6A38,&18  
KAGA 260-IF-c(4)=-1-THEN-POKE-&1CA3,0:POKE-&1CA4,0  
LALA 270-IF-c(5)=-1-THEN-POKE-&6EAB,&FF:POKE-&692A,&6F  
IAGO 280-RESTORE-300:FOR-a=0-TO-17:READ-a\$  
KALE 290-POKE-&FFD0+a,VAL("&"a\$):NEXT:CALL-&FFD0  
HAPC 300-DATA-f3,31,00,00,21,c0,12,11,00  
HAJO 310-DATA-01,01,00,be,ed,b0,c3,00,01  
PAFN 320-DATA-"IKARI-WARRIORS--AA-Tape-41","Transfer-to-disc"  
ABPA 330-DATA-"Play-game","Run-cheat","Infinite-bullets"  
GBMA 340-DATA-"Infinite-grenades","Invulnerability","No-enemy-soldiers"  
IAFN 350-DATA-"255-lives","Play-game"  
KAHB 360-DATA-"Please-insert-AA-Tape-41"  
NAPE 370-DATA-"and-a-disc-with-at-least-36K-free"

GAFA 375.'.'Transfer-game  
MAGA 380-RESTORE-360:CLS:READ-a\$,b\$:PRINT-a\$CHR\$(10)b\$  
CBLN 390-PRINT:PRINT-1\$:PEN-2:PRINT-TAB(5)"Then-press-any-key":PRINT-1\$  
HAFI 400-PEN-1:WHILE-INKEY\$<"":WEND  
LAOP 410-CALL-&BB18:|TAPE:PRINT:PRINT>Loading..."  
OAP 420-OPENOUT"ld":MEMORY-4799:LOAD"likari.bin",&12C0:|DISC  
OAAJ 430-RESTORE-460:FOR-a=0-TO-37:READ-a\$:POKE-&BE80+a,VAL("&"a\$)  
EACI 440-NEXT:CALL-&BE80  
NAGM 450-CLS:PRINT"Game-transferred."":CALL-&BB18:RUN  
HADB 460-DATA-21,9d,be,06,09,11,00,c0  
IAED 470-DATA-cd,8c,bc,21,c0,12,11,00,8e  
HACE 480-DATA-01,00,00,3e,02,cd,98,bc  
IAJF 490-DATA-cd,8f,bc,c9,49,4b,41,52,49  
EAGH 500-DATA-2e,42,49,4e

## ZYNAPS

Once again Alex Cochrane of Wishaw does us proud with another of his excellent covertape pokes. This time Zynaps is the game that bites the bullet, and if you can't finish it now, you never will!



JAGB 10.'.'ZYNAPS-AA-TAPE-40-CHEAT/TRANSFER  
NAEM 20.'.'A.COCHRANE.(PINCHED-FROM-J-GIRVINS-SPACE-ACE-CHEAT)  
KAKA 30-MODE-1:INK-0,0:BORDER-0:INK-1,26:INK-2,24  
HB0B 40-LOCATE-9,1:PEN-1:PRINT"ZYNAPS-AA-TRANSFER/CHEAT":PEN-2:LOCATE-9,2:PRINT"\*\*\*\*\*"  
FBKK 50-LOCATE-5,5:PEN-3:PRINT"1-TRANSFER-GAME-TO-DISC":PEN-2:LOCATE-5,7:PRINT"2-DO-CHEAT."  
FACM 60-A\$=INKEY\$:WHILE-A\$<"":EANE 70-IF-A\$="1"-THEN-100  
EAFF 80-IF-A\$="2"-THEN-160  
DAAL 90-WEND:GOTO-60  
GBOF 100-PRINT"Insert-tape-40-into-drive":PRINT"Insert-destination-disc"  
ABIM 110-PRINT"Press-any-key-when-ready":WHILE-INKEY\$="":WEND  
LAED 120-|TAPE:OPENOUT"a":MEMORY-&EFF:CLOSEOUT  
GAGF 130-LOAD"zynaps2.bin"  
KAFJ 140-|DISC:SAVE"zynaps2",b,&F00,&9100,&9000  
GAGO 150-SAVE"zynaps":|BASIC  
HBGD 160-PEN-1:PRINT:PRINT:PRINT"load-from-CHR\$(24)"T"CHR\$(24)"ape-or-CHR\$(24)"D"CHR\$(24)"isc"  
EAGH 170-WHILE-INKEY\$="":GAGA 180-IF-INKEY(51)=0-THEN-210  
GABB 190-IF-INKEY(61)=0-THEN-220  
EALA 200-WEND:GOTO-170  
CAJF 210-|TAPE  
JAFF 220-OPENOUT"a":MEMORY-&EFF:CLOSEOUT  
GACC 230-LOAD"zynaps2",&F00:  
KAKJ 240-INPUT"Do-cheat-Y/N":a\$:a\$=UPPER\$(a\$)

IABG 250-IF-a\$="Y"-THEN-270-ELSE-CALL-&9000  
BAOP 260-STOP  
EAKE 270.'.'ZYNAPS-CHEAT  
HANE 280-RESTORE-320:start=&BE80  
JACH 290-READ-a\$:IF-a\$="dun"-THEN-CALL-&BE80  
HAFO 300-b=VAL("&"a\$):POKE-start,b  
HAHN 310-start=start+1:GOTO-290  
HAOH 320.'fire-thru-scenery  
FANG 330-DATA-3e,c9,32,bf,48  
HAPD 340.'invulnerability  
FAPD 350-DATA-3e,c9,32,5d,56  
EAOI 360.'inf-lives  
FAMD 370-DATA-3e,c9,32,4e,60  
DABM 380.'255-lives  
FAGK 390-DATA-3e,ff,32,7e,5f  
DAGG 400.'uzi-9mm  
FALA 410-DATA-3e,c9,32,39,61  
FAGD 420.'no-bad-dudes  
KAGL 430-DATAaf,32,3f,4a,32,44,3a,32,49,4a,32,4e,4a  
HAGC 440.'fly-thru-scenery  
FALD 450-DATA-3e,a7,32,e2,48  
JAJD 460.'aliens-have-no-bullets  
FABK 470-DATA-21,37,c9,22,a6,48  
KAJD 480.'\*\*\*\*\*do-not-remove-\*\*\*\*\*  
FABC 490-DATA-c3,00,90,dun

## JUMPMANIA

Back sticking his oar in again is Carl Thomas, this time with some passwords to the PD game, Jumpmania. Keep 'em coming, Carl.



B-doing!  
B-doing!

Level 1	HEYEO	Level 17	MODET
Level 2	OAREA	Level 18	YPECH
Level 3	COOLG	Level 19	EATAS
Level 4	UYION	Level 20	AFILE
Level 5	HAVEN	Level 21	NAMET
Level 6	OTICE	Level 22	HENYO
Level 7	DTAT	Level 23	UCANG
Level 8	THISI	Level 24	ETTOT
Level 9	SAHD	Level 25	HENEX
Level 10	DENME	Level 26	TLEVE
Level 11	SSAGE	Level 27	LBYPY
Level 12	IFYOU	Level 28	ESSIN
Level 13	WANTT	Level 29	GCONT
Level 14	OHAUE	Level 30	ROLAN
Level 15	ANICE	Level 31	DSHF
Level 16	CHEAT	Level 32	TANDC

Carl also suggests that if you enter CHEAT as a load/save filename, you'll be able to press CTRL, SHIFT and C during play to skip a level.

## DAN DARE 3

Leigh Cocker writes in with a point to prove. His dad insists that he could not get his name printed in AA. Oh dear, Mr Cocker, looks like Leigh wins with just a little help from his friends (sorry, bad joke).

Leigh tells us that if you go to the store and use up all of your ammo in Dan Dare 3, you'll get 4,000 credits to spend on anything you like (how about Ryan Giggs's feet?). You can repeat this method as many times as you like.

# TYPING LISTINGS

If you've never typed in a listing from AA before, then reading the following blurb is a REALLY GOOD IDEA. It'll save you no end of hassle.

● Basically, all you need to do is make sure you type in exactly what we print EXCEPT the first four letters in each line.

● The first four letters are a code which work in conjunction with our unique and utterly excellent TypeChecker program below.

● Only press RETURN when you get to the end of a command line. If a command line goes on to two lines do not press RETURN at the break in the line.

● The dots you see in some lines (like the one between well and done in PRINT"Well done") indicate spaces. The dots are there so that you don't have to guess how many spaces to put in when there are more than one.

## TypeChecker

This program enables you to check whether you've typed AA listings in correctly. Type it in, then SAVE it for future use. When you want to double check that you typed a listing in correctly:

- Load up TypeChecker.
- Type NEW.
- Type in the listing of your choice.
- When you've finished type LIST.
- At the end of every line a highlighted code will appear. It should correspond with the code printed in front of the same line in AA. If it doesn't you have typed in that line incorrectly.

PAML 10.'.'TypeChecker.V1.0--By-Simon-Forrest  
er--Dec-1992

MAOJ 20.'.'For-Amstrad>Action--Public-Domain  
DANK 30-MEMORY-&9FFF

CAJK 40-csum=0  
GAME 50-FOR-addr=&A000-TO-&A05B

DAKJ 60-READ-byte\$  
GAJB 70-byte=VAL("&"byte\$)

FACF 80-POKE-addr,byte  
GAFB 90-csum-csum+byte

DALK 100-NEXT-addr  
OACI 110-IF-csum<>&2ADD-THEN-PRINT"Checksum-Error":END

LAHE 115-POKE-&A001,PEEK-&BB5B:POKE-&A002,PEEK-&BB5C

KAKI 120-POKE-&BB5A,&C3:POKE-&BB5B,&3:POKE-&BB5C,&A0

MACN 130-PRINT"TypeChecker.V1.0-Installed":END

MABC 140-DATA-CF,FE,93,FE,0A,CA,00,A0,F5,C5,D5,E5,FE,0D,CA,22

LACJ 150-DATA-A0,5F,16,00,2A,5A,A0,19,22,5A,A0,E1,D1,C1,F1,C3

LAFJ 160-DATA-00,A0,3E,20,CD,00,A0,3E,18,CD,00,A0,2A,5A,A0,7C

LADI 170-DATA-CD,45,A0,7D,CD,45,A0,3E,18,CD,00,A0,21,00,00,22

LACN 180-DATA-5A,A0,C3,1B,A0,F5,E6,0F,C6,41,C0,00,A0,F1,E6,F0

KAJC 190-DATA-1F,1F,1F,1F,C6,41,CD,00,A0,C9,00,00,END

Turning TypeChecker off (it is automatically initialised when you RUN the program above) and back on again is quite simple:

POKE &BB5B,0 To turn it off  
POKE &BB5B,3 To turn it back on again  
Isn't science amazing? (Now don't argue.)

# The manic multipoke mania zone

Not content with having his name all over Cheat Mode (a singular honour, indeed), Carl Thomas feels that the manic multipoke slot should be his to command as well. Jokes aside now, though, as Carl Thomas and Leigh Cocker prepare to set your red buttons a-rocking.

Game	Format	Poke, Address	Effect
Ghostbusters	(T)	8B69,00	Infinite Traps
Bombjack	(T)	028D,00	Infinite Lives
Bombjack 2	(T)	017A,00	Infinite Lives
Pipemania	(T)	261F,00	Infinite Time
Guardian 2	(D)	A387,00	Infinite Cloak
Live & Let Die	(T)	7495,00	Infinite Missiles
		7401,00]	Infinite
		7402,00]	Fuel
Rex	(T)	3D15,00	Infinite Shield
		3DD8,00	No Weapon Energy Loss
		3F11,00	Infinite Lives

## THE MULTIPOKE WAY

The (T)s and (D)s before the address indicate whether the poke was written for a tape or disk game. Just in case you don't already know how to put in these BLACK BOX POKES, here are the steps to success...

1. Load the game as normal.
2. Press the RED button on the MULTIFACE.
3. Press 'T' for tool.
4. Press '' to make sure you select the code.
5. Press 'H' for HEXADECIMAL input.
6. Press 'SPACE' for input.
7. Type in the ADDRESS (4 characters ie: 3A7C)
8. Type in the POKE (2 characters ie. A7)
9. Press 'RETURN'
10. If there is more than one poke, repeat from point 6.
11. Press 'ESC' back to the menu.
12. Press 'R' to return to the game.



# Basically basic

In probably the greatest partnership since Paul Merton turned up with a tub of lard in *Have I Got News For You*, Angela Cook and Rob Buckley team up to bring you this brilliantly philosophical guide to BASIC ARRAYS.

Cast your minds back into the depths of time – well, as far as last issue, at least. If you remember, we were looking at techniques to help you write the ultimate game. This month we continue that process with our guide to the wonderful BASIC programming structures known as ARRAYS. Hurrah!

What is an ARRAY? Well, put simply it's a list of numbers or strings that can be labelled in the same way as a normal variable, the difference being that an ARRAY has a pair of brackets ( ) after the variable name. For example:

A=50 Is a normal variable  
A(10)=50 Is an ARRAY variable

Contained within the brackets there are normally one or two numbers that indicate which parts of the list the data is to be taken from.

```
10 DIM A(10)
20 FOR F=1 TO
10:A(F)=INT(RND*20):NEXT
```



No, no, no! I said 'array'. One word. Not 'a Ray'. It's a wonder I stay sane in this place.

After running this, you'll find that an ARRAY called A() has been created, where each element, A(1)...A(10), has been filled with a random number between 0 and 19.

## What's the difference?

'So?' you cry. 'I can do that with normal variables!' Well, yes, you can, but doing it with normal variables is very long-winded and normally impractical. For example:

```
A1=INT(RND*20):A2=INT(RND*) etc.
The following proggy, called Arnold,
```

shows just how useful ARRAYS can be.

```
10 DIM NAMES(20), TEL$(20)
20 INPUT "ENTER NAME"; NAMES
30 NAMES=UPPER$(NAMES)
40 FOR F=1 TO 20:IF
NAMES=NAMES(F) THEN 100
50 NEXT
60 FOR F=1 TO 20:IF
NAMES(F)="" THEN 80
70 NEXT
80 INPUT "WHAT IS THE PHONE
NUMBER"; TEL$(F)
90 NAMES(F)=NAMES:GOTO 20
100 ? "THE NUMBER OF "; NAMES; " IS
"; TEL$(F)
110 GOTO 20
```

This program does two things, if you enter a name, Arnold recognises it automatically and prints up the corresponding number. Otherwise it asks you what the telephone number associated with that particular name is. Well, it does if you have any friends, unlike myself and Rob (*Grab the violins, someone – Karen*).

## Nice but DIM

The DIM command in line 10 is short for DIMension, and refers directly to the size of the ARRAY being created. Here we are telling Arnold to create enough space for twenty NAMES() and twenty TEL\$(). In line 30 we use the function UPPER\$, which will take the string in the brackets, namely NAMES, and convert it to upper case. This is very useful as Arnold perceives upper and lower case characters differently, so that 'Fred' is different to 'FRED' or 'fred'. By

making everything upper case we eliminate the chance of error.

Line 40 is the loop that checks whether our name string equals any of the strings in the ARRAY. If it matches, then it jumps to line 100. Line 60 is another loop, and because we've already established that the string doesn't match any of the others contained in the ARRAY in line 40, we have no corresponding name. So, we have to look for an empty space where we can position our new NAMES. This is done using the line IF NAMES(F)=""

Line 80 then asks what the telephone number is for TEL\$(F). While line 90 simply updates it, like so:

NAMES(F)

To equal NAMES.

In line 100 Arnold prints the required telephone number for the supplied name.

## The number game

Now, while this maybe all very useful for databases and the like, what about games – no long lists of names and numbers there. Or at least that's what you think at first glance, but in actual fact, games are chock full of numerical data. Even dismissing the high-score chart, a game program still needs to keep track of where certain players, bullets or monsters are. This can be taken care of with ARRAYS. For example: MONX(F) or BULLET(9).

Well, that's it for now. Next month you'll be able to put your new talents into action, when we show you how to code a game. In the meantime, have a good Christmas, we'll be round for lunch!



## A wrinkle in your stocking

Right, as it's Christmas, here's a proggy that all you trendy CPCers have been waiting for. Yep, that's right: a Stereogram creator. You've seen them in the papers, you've got the book, and now you have the listing.

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```
10 MODE 0:INK 14,9:INK 15,12
20 FOR F=&C000 TO &FF00:POKE F,INT(RND*256):NEXT
30 GOTO 30
```

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# No partridges. No pear trees. Just the twelve ultimate CPC pressies...

The hairy elf, who bore a suspicious resemblance to *Amstrad Action's* Simon Forrester, slapped the gag across Santa's mouth, before turning to grin at his chums...

'Christmas is coming,  
The goose is getting fat,  
Down with the fat bloke  
And his stupid red hat.'  
The elves giggled their way through their revolution anthem as they securely bound and gagged Santa. It wasn't that the kindly old bloke was really a tyrant, the elves had just had enough of watching all the fantastic pressies fly out of the door. All they ever got were the stupid wooden trains and cricket bats that they managed to sneak out of the workshop. Well, they weren't going to stand for it any more!

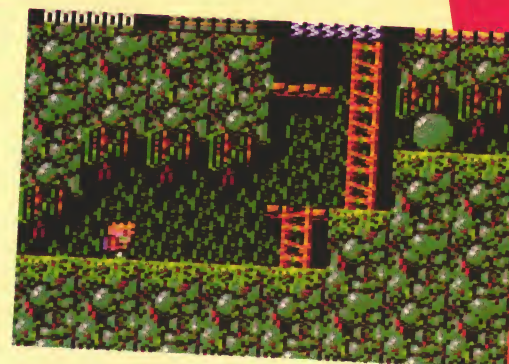
After a few minutes of confusion, the ring-leader took charge, and two other elves dragged the stuffed mailbag into the centre of the workshop floor. The elves cheered as the bag spilt a sloppy pile of badly-penned envelopes across their workbench; a ripple of activity worked through the crowd as one of the shorter elves read out the first letter...

Dear Santa,  
On the first day of Christmas,  
You'd better give to me  
An Amstrad CPC.  
It's just the right shape  
To fit down my chimney,  
So give it to me right now.  
Roger Bannister, aged 8

After reading the letter aloud, the elf's ring-leader whistled loftily and looked across the workshop. The letter floated to the floor, doomed to be accidentally stamped on by thousands of elfish feet in tacky green winkle-pickers. As the letter miraculously found its way on to the large open fire, an oddly hairy elf ran through the crowd clutching the gift intended for the young Roger Bannister: the Amstrad computer. All the elves had to do now was find the other letters...



Dear Santa,  
For Christmas I would like a copy of Rick Dangerous 2 – one of the best platformers ever. I've been very good this year, and have made a real effort to leave the wings on insects (well, most of the time). In fact, they say I should be out by Christmas Eve.  
Jimmy Osmond, aged 13



'Hold your reindeers, boys!' screamed the bearded elf, partly because of the pain of being crushed by the stupidly heavy Amstrad monitor, which he was endeavouring to get on to the bench, and partly because he'd just been shoved aside by eager elfish hands clutching a copy of the game on disc.  
'It's the best platformer ever, and the kid could probably find it in the mail order ads anyway,' squeaked the elf with the game. 'He'd better, because the mix of reflex action and lateral thinking combined with excellent presentation make it the ultimate action game this year.'  
'Have you ever considered a career in computer journalism?' muttered the bearded elf, but sarcasm is wasted on the short.

Dear Santa,  
I'm tired of my CPC – I want something with a little more power. I don't want a PC or anything boring like that. I just want something I can play games on, that looks a bit better, and maybe has better sound. I want a console machine.  
Dominik Diamond, aged 34

A tangible silence fell over the workshop. The elves were beginning to look worried – they weren't too sure about this stuff. It was all very well sending the kid a SNES, but they had to account for the fact that they were presently being watched by several thousand ardent CPC fans.

'Got it!' cried a previously quiet elf with long, ginger hair. 'To be honest, I was planning to keep hold of this for myself, but I suppose, what with it being Christmas and everything...'

Walking over to the sack, she carefully placed the GX4000 inside. 'It's a crying shame these never took off, because they really are very good. The games were of excellent quality, and the carts are dead cheap these days from places like Trading Post.'

A cheer went up – they had very nearly gotten themselves thrown out of the magazine for that one.



Dear Santa,  
Please could you get me a Multiface 2 this year? I don't ask for much, and if I don't get what I want, I'll scream and scream and scream until I'm sick.  
Nicholas Campbell, aged 16



One of the more conscientious elves was the partway through bubble-wrapping the Romantic Robot add-on for transport when the black box was rudely wrenched from his hands and plugged into the back of the elves' new computer.

'We'll definitely need this if Rick Dangerous gets too hard, because it'll enable us to give ourselves infinite lives and everything,' claimed a bespectacled elf as she started fiddling with the bubble wrap. 'After all, if we haven't got a Multiface, we haven't really got a CPC,' she grinned.

Dear Santa,  
I've already bought myself a brilliant CPC Plus, but now I want a game that's really going to stretch the machine to its absolute limits.  
I want some of the best gameplay the CPC has ever seen, complemented by some of the best graphics and an awesome soundtrack. I want several levels of fiendish action, and I want it all on one disc.  
Elmar Kriegar, aged 22

'Easy, that one,' said the hairy elf, glancing briefly up from the monitor on which Prehistorik 2 was proudly displaying its loading screen. 'He can go tickle a reindeer if he thinks he's having my copy, though...'

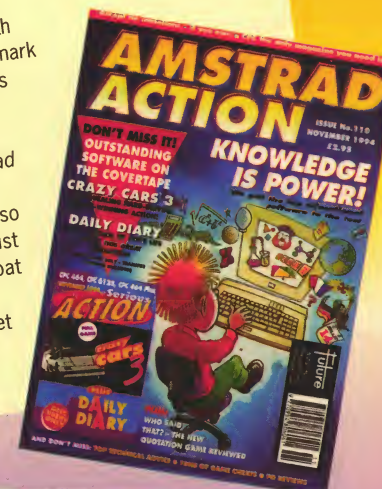


Dear Santa, ...  
But the hairy elf didn't read any further, instead holding up a second item from the same envelope. 'He's enclosed a stamped, addressed envelope,' he sneered. Then, making a note of the child's address, the hairy elf ate the letter, SAE and all.

'Right,' he said, 'we can either send this brat a complete set of Amstrad Action back issues, the ultimate companion for CPC users no matter what they do with their machine, or we can mark his chimney on the map as toilet facilities.'

'Toilet facilities,' said another elf flatly. 'Amstrad Action is the ultimate peripheral for the CPC, so we're having it. Look, just send the kid a cricket bat instead.'

'Cricket bat. Cricket bat...' the elves were chanting in glee.



Dear Santa,  
I'm getting a bit bored with the normal, tired CPC games – I really want a text adventure to see me through all the long winter evenings.  
Gretta Garbo, aged 14

The male elves fell strangely silent, each drinking in the remembered image of one woman: Ingrid Gnome. Gnome Ranger, the excellent nine-level, two-part adventure, was a long, involving game to begin with, but no elf had a figure like Ingrid Gnome, the star of the story.

'She isn't just good-looking, either – she's tough enough to survive witches, eagles, unicorns and dodgy shopkeepers. She's pretty good with a cauldron too,' cooed the short elf.

The female elves in the crowd, aware that emotions were now running wild, quickly found the next letter.



Dear Santa,  
I know this is a bit of a difficult one for you to get together, but could I possibly have a copy of Soft 968 – the elusive Firmware Guide the folks on Amstrad Action told us so much about?

Roland Perry, aged 13

'Get your filthy, thieving, pudgy hands off my Guide!' screamed the hairy elf, fiercely clutching a large, ring-bound black book to his chest.  
'What's the problem? It's just a dull and utterly tedious book – I couldn't follow the plot at all.' The bearded elf had a point.

'Are you kidding? If you want to get into programming on your CPC, this is the best book to own! If even a page of this book goes missing, I'll pistol-whip every short-arsed, squeaky midget in this place. The book stays.' No-one commented as the hairy elf shoved his prized possession down his tunic.

Dear Santa,

I'm desperate to use my CPC for word-processing, and I need the best package available for the job. If you could see your way clear to getting a copy of Protex down my chimney, I'd really appreciate it.

Mark Twain, aged 80

'You really should have respect for your elders – this guy really knows what he's doing. With a copy of the fastest, most powerful word processor around, courtesy of Arnor, this guy should be churning out books by the bucket-load.'

The straight-faced elf (who was clearly some kind of political agitator) put a copy of Protex into the sack which, now only containing two items, made the poor, trussed-up Santa Claus wince in pain.

Document cheatmode.32 Page 1 Line 5 Col 10 Free 16381  
Insert Word-Wrap Right-Justify No markers set CTRL-H for Help  
As promised Dunstables Andy Price has whipped up cheats for a couple more Quattro compilations, Quattro Sports and Quattro Fantastic get a fairly sound poking this month, but because some of the games just aren't worth poking Andy has added an unpublished poke for Pro - golf simulator.  
The 3 pokes contained in the cheat are:  
1) Pro golf sin which allows infinite strokes.  
2) Pro ski sin allows you to stay on the present piste (there must be a hole here somewhere) instead of starting from scratch.  
3) Fruit machine sin - inf credits for all players.  
Paul Hornsey of Linlithgow Bridge has sorted out the incredibly addictive (zzzzzz - !) covertape game from AA08, Wriggler. Not only does his poke supply 255 lives but also infinite ant spray - phew!  
Oh, your makin' me Dizzy, my head is spinning... Just in case you happen to have missed out on Dizzys many adventures during the last few years, I'm adding to you requests. I think you might have here...

Dear Santa,

I've played all the games I wanted to, and I've written letters to my aunt on Protex for the last four years. I want something different. For Christmas this year, I'd like you to bring me a copy of OCP Art Studio – you know, the excellent Rainbird drawing

package that includes cut and paste facilities, spray cans, patterned fills, palette switching, and loads, loads more. Thanks.

Arthur Prestatin, aged 29

'Hang on a minute, he's a bit old for this sort of lark, isn't he?' the young elf queried.

'He's got a point, though,' replied the bespectacled elf. 'With OCP Art Studio and a lot of time, you can produce some completely stunning pieces of artwork. So, come

on, lads, look lively – we ought to be able to find a copy in the ads.'

'Hold on! Did you mention... work?' Silence fell over the crowd, and the bespectacled elf began to look worried. Grabbing the box, she marched over to the still virtually empty sack and threw in the art package.

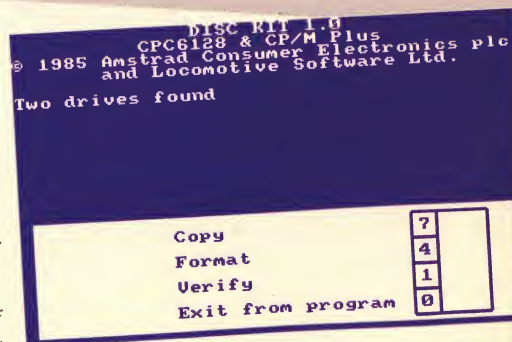
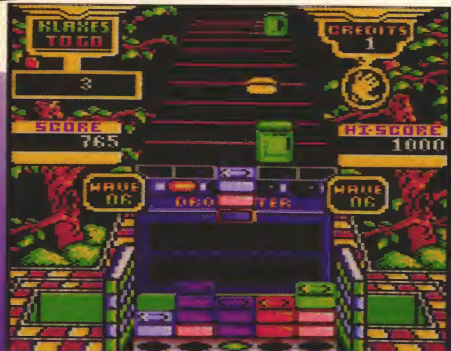
Dear Santa,

Oh yes, very flippin' clever! You sent a ROM version of Protex down my chimney, but I haven't got a ROM board...

Actually, if you've got any lying around, could you see your way clear to slipping ROMBO's excellent ROMboard between the slates? Because, as you know, if you haven't got any software on ROM for your machine, you'll never know the joy of having all of your favourite utilities on hand instantly, at the tap of a key.

And, erm, I sorry I shouted at you before – I didn't mean it.  
Mark Twain again, aged 80 (still)

An eerie silence fell over the red-bricked workroom as a stunned elf started leafing through Amstrad Action's small ads. He knew that was the best place to find a ROMboard these days.



# WACCI talk!

The WACCI user group has been helping CPC users to help themselves for eight years now. But things haven't always been so easy. David Crookes chats to WACCI's new leader...

If you've been around the CPC scene for any length of time, you'll probably already be familiar with the WACCI user group – if only because of its famous monthly fanzine. The mag includes 32 A4 pages of serious articles, but the group offers plenty of other services for keen Amstrad owners (see the 'What you see is what you get' box below).

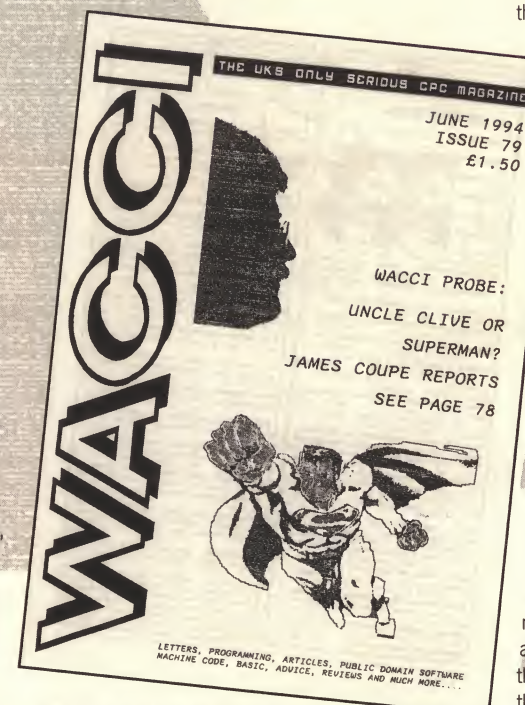
Things have not always been so rosy for WACCI, though. In the not too distant past the group almost vanished from the face of the earth when its previous owner, Steve Williams, ran out of cash and was forced to quit in the face of growing bills and irate customers.

Clive Bellaby stepped in, though, rounding up some other Amstrad enthusiasts whom were regular WACCI bods to set the ball rolling again. And when the running of the club proved too much for him, Paul Dwerryhouse ensured the group's continued survival. As he explains, 'WACCI has been successful because we target a certain sector of the CPC scene: the serious side, and [the fanzine] has managed to do that better than any other monthly magazine. (Excuse me? – Karen)

'The quality of the articles are the building blocks of WACCI's success and they come from members, so the knowledge base that the membership has is, indeed, the greatest asset that WACCI has.'

## Publishing phenomenon

For fanzines like WACCI, eight years of continued publishing is a phenomenal achievement. The CPC has seen many fanzines come and go over the last ten years, but their publishers have either lacked the time or enthusiasm to keep them going. But because the WACCI mag is based on a user group, it has plenty of support to help keep



WACCI maybe eight years old, but it still has plenty to offer.

things rolling along. You see, the group has around 300 members to call on for help – so the mag's never short of the odd helping hand.

This is something that Dwerryhouse has clearly considered. 'The fact that WACCI is eight years old is a good measure of our success. WACCI must have been giving members what members wanted! We're a club, owned by members and run in an open fashion. It doesn't have to make a profit to survive. It must, of course, not make a loss but that gives plenty of scope in the running of the club and production of the magazine.'

'The "officers" that take part in running the club do it for the love of it (as do those that contribute to the magazine) and with this support, I think WACCI has quite a few years left.'

It has to be said that user groups can only be a good thing, and that as long as groups are around to emphatically push the machine along the right path towards continuing support, then the future can only look good, can't it? This is a philosophy that WACCI's new controller is keen to emphasise. 'If you consider the machine as a games machine then that market has already faltered. Yep – some good PD stuff is available, but its days are numbered. The serious side is very different – the market has more products of superb quality than ever before.'

The likes of Protex will go on for ever and ever. They will not falter and the CPC will become the best value home

word processor the world has ever seen – but reckon it's already that.'

## WACCI races on

WACCI offers its members plenty of services already, but the group doesn't plan to rest on its laurels. So what has WACCI got in the pipeline then?

'Well, a new buy/self service is being introduced called Market Stall for members to advertise within the magazine,' enthused Dwerryhouse. 'Up until now adverts were a bit hit and miss depending on available space. A page will now be set aside, and the service goes a little further than that. Should a member place a wanted advert, then a record will be kept and matched with a future sale advert to ensure he that wants, talks to he that has,' he added warning to his subject.

'As well as the complete index of the magazine, covering some 81 issues, a detailed index of the PD library is in production, and this will be out soon. This will greatly enhance the search facilities for that program you have been trying to find. WACCI already produces a detailed 21 page supplement of its libraries, but this will knock spots off that listing.'

Right, so we've heard about everything WACCI has to offer in terms of its fanzines and other services, as well as its views on the CPC's future, but let's get down to the crux of the issue: is running a huge user group like WACCI much fun?

'I would not be the editor if I found any part of it difficult or not fun,' explained Dwerryhouse. 'Production of the magazine is something I can easily control. The most important factor is the need for a constant supply of good quality articles, and WACCI members do seem to be able to supply those. WACCI actively encourages members to use their machines and learn, and I believe WACCI is a leading light in the CPC world.'

## What you see is what you get

If you join WACCI, in addition to receiving its fantastic monthly fanzine, you'll also be able to take advantage of its excellent and exclusive range of services. These include...

- **A PD library**  
Not only can you get the software on disc, there's also a tape library. It's fairly comprehensive and quite cheap. It also offers an all-inclusive offer.
- **A book library**  
The major advantage of a book library is that if you want to read up on a specific topic, you can borrow the book rather than buy it.
- **Telephone helpline**  
Got a problem with your CPC? Give WACCI's helpline a call.
- **Discounts and special offers**  
Quite a few companies offer discounts to WACCI members, so you could end up saving yourself quite a few bob on CPC purchases.



# So why do I need a RAMpack?

**Haven't got enough room to store all your best POKEs? Can't run your favourite game? Haven't got sufficient memory to store game graphics? You need a RAMpack, mate. Richard Wildey reveals its secrets.**

The first thing to realise about the 64K RAM expansion packs is that they act in exactly the same way as the extra 64K in a 6128 machine – so everything in this article will apply to 6128 owners too.

Regardless of which CPC you're using, you'll soon discover that that elusive memory is not directly accessible from BASIC without the use of BANKMAN (or an equivalent program supplied with the memory extension pack).

The disadvantage with this situation is that neither of these two programs are Public Domain, so it's illegal to copy them, which makes writing 128K programs a nuisance. The good news, however, is that all the routines detailed on this page

## Listing 1

```
;Bank swapping routine Z80 source
code
;ld a,banknumber (0-4, 0 is normal
RAM)
;call bank
```

```
.bank
LD b,&7f
LD c,a
OR a
JR z,nram
ADD &c3
OUT (c),a
RET
.nram
LD bc,&7fc0
OUT (c),c
RET
```

## Listing 2

```
5 'Bank swapping RSX.
10 add=&8000
20 READ a$:IF a$="end" THEN CALL
&8000:PRINT "BANK, X installed":END
30 POKE add,VAL("&"a$):add=add+1
40 GOTO 20
50 DATA
01,0E,80,21,0A,80,CD,D1,BC,C9,00,00,
00,00,13,80
60 DATA
C3,19,80,42,41,4E,CB,00,00,DD,7E,00,
CD,20,80,C9
70 DATA
06,7F,4F,B7,28,05,C6,C3,ED,79,C9,01,
C0,7F,ED,49
80 DATA C9,end
```

are Public Domain, so you can copy and plagiarise them to your heart's content.

## Raiding the bank

The RAM in the CPC is stored in 'banks', each of which is 16K in size. The first 64K, known as dynamic RAM, is stored in banks 0-3, while the extra 64K is stored in banks 4-7. To access this extra RAM, you have to swap one bank in dynamic RAM for one in extra RAM. The bank generally used is 1, because it doesn't hold any data that will crash the system (just the memory locations &4000 to &8000). On the 6128 and plus machines these banks can be paged in using the firmware call &BD5B (KL Bank Switch) where the A register contains the bank number 4-7, which you wish to move into &4000.

However, in cases where the firmware is corrupt, speed is paramount or you are using a 664 or 464, you must use the OUT command as demonstrated in listing 1. Load the A register with the extra bank you want to locate in &4000 and CALL it. The banks here are numbered 0-4, where 0 is normal RAM and 1-3 are the extra banks. For the BASIC programmers among you I have put this into the form of an RSX in Listing 2.

## Thanks for the memory

Now we've established how to access the extra memory, the question is what can you do with it? Each bank is &4000 bytes, which is exactly the same size as a screen – so four screens can be stored in memory and then displayed one at a time. Or, if you prefer, variables can be POKEd into memory if you're short on space. If you've ever tried

to write a game, you'll know that graphics take up an awful lot of memory – these extra banks are an ideal place to put them. You should also try to get your hands on a useful utility known as a RAMDISC (there are a few of them in the public domain). Alternatively, you can try the simplified version in listing 3.

This enables you to store and retrieve four BASIC programs with the commands IRLoad and IRLSave.

Away from the actual programming side of things there are an awful lot of good programs that need 128K to run – such as *Advanced Art Studio*, most DTP packages and an increasing number of games. Not only that, but you will also find that most disc copiers will give you a larger buffer. All in all, the 64K RAMpack is a neat bit of kit, which, when used to its full potential, can make your computing life a lot easier.

## Listing 3

```
10 'Simple BASIC RAMDISC for AA
20 add=&9000
30 READ a$:IF a$="end" THEN CALL
&9000:PRINT "IRLOAD, X IRLSAVE, X
installed.":END
40 POKE add,VAL("&"a$):add=add+1
50 GOTO 30
60 DATA
01,0E,90,21,0A,90,CD,D1,BC,C9,00,00,
00,00,16,90
70 DATA
C3,22,90,C3,30,90,52,53,41,56,C5,52,
4C,4F,41,C4
80 DATA
00,00,DD,7E,00,CD,42,90,11,00,40,21,
70,01,18,0C
90 DATA
DD,7E,00,CD,42,90,11,70,01,21,00,40,
01,00,10,ED
100 DATA
B0,AF,06,7F,4F,B7,28,05,C6,C3,ED,79,
C9,01,C0,7F
110 DATA ED,49,C9,end
```

set the aggressive volume. Very useful indeed. David hasn't seen this yet! Cut, clear and paste features are available for a voice or a pattern. Say you decided to put the music on channel 3 that was on channel 2 you would use CUT AND CLEAR VOICE then PASTE VOICE.

# Further reading

**Do you need something to supplement your CPC diet? David Crookes has got just the thing. Further Reading is guaranteed with no sugar or artificial additives.**

**REVIEW**

## Amszine 3

PRICE: £1 & SAE  
EDITOR: Jonathan

Brunhead  
ADDRESS: Gayton,  
Laneside Road, New Mills,  
Nr Stockport SK12 4LU

If the purpose of fanzines is to deliver a pulsating package of riveting reviews, then *Amszine* is wonderful. Issue three's themes are car games and music games. These two themes make up the bulk of the issue – 11 pages, in fact.

Of course, there are the odd articles for the non-car crazy and musically challenged – a few



**Amszine is A4 in size, but the printed part only covers an area of about A5.**

## THE NEWS SUMMARY

- Whoops! Don't know whether you remember, but a couple of months ago in AA we mentioned hearing a rumour that *Artificial Intelligence* (the UK's number one PD journal) would soon be back on the scene. Well, it seems that after reading *Better Than Life*, Tim Blackbond has no intention of re-launching his fanzine after all. Pity.
- CPC Express, or CPC Trekking, as it was also supposedly entitled, has closed after

serious reviews, a printer feature and some cheats, for example. But this tight theming can create problems. You see, when you theme a 'zine like this, people who aren't interested in the chosen topics can feel neglected.

That said, let's get down to the nitty gritty and examine the thing more closely. Well, the design may not pip the post, but it's adequate – despite the fact that on some pages it's tricky to follow the flow of the text because of the cluttered layout. However, it still retains the excellent screenshots that boosted the marks of the first two 'zines.

How well written is it? Quite well. It tends toward 'youth' language, but I couldn't help thinking it was a little dated (do people really still say 'yo!?!'). That apart, you'll find it a pleasant read.

One thing that does niggle, however, is the size of the magazine. It's still presented as an A4 fanzine, but the pages themselves (that is, the printed part) seem to be about A5 in size, which means there's a massive border stretching around three sides of the page. This isn't just ugly, it looks unprofessional too.

Don't get me wrong, *Amszine* is still one of the best 'zines around. You can tell a lot of hard work has been put into it, and so after racing around in a central position, it's charted in a very favourable spot.

**Content:**  
**Appearance:**  
**Overall:**

**80%**  
**60%**  
**78%**

**REVIEW**

## KRASH

PRICE: £1.50 & SAE  
EDITOR: Karl White

ADDRESS: Bryn Trefor,  
Llandecwyn, Gwynedd, North  
Wales LL47 6YR

The last time *KRASH* appeared in *Amstrad Action* was way back in issue 105. At that time it received a fairly lukewarm 54%, because although it looked excellent, the actual content (which, let's face it, is

many months of messing about. Did it jump or was it pushed?

- CPC Undercover has re-opened, but not without a few major changes. First, Joe Moulding of *Sleepwalker* fame has completely taken over the magazine, which from now on will be designed on the PC. It'll still be A5 in size and will no doubt include the same contributors. We've seen a few sample pages so far, and it looks excellent.

what makes a magazine) was as exciting as an early burst of the *Open University*.

So here we go again with issue two. *KRASH* has improved, but it's still not good enough. The problem is much the same as before: the design is the best we've ever seen in a fanzine, but once again the content lets it down – although its not as bad as last time. Still, it only took about half-an-hour to read through the 14 pages.

Basically, all it consists of are a few reviews and a round up of some PD libraries; the rest of the mag is a mixture of self-publicity and page wasting. Fortunately, the editorial does read well, it's just a bit brief. Take the in-depth look at *Gazza 2* and *Emlyn Hughes* that's so proudly proclaimed on the front cover, for instance. I mean, you'd expect there to be at least a page devoted to each program, wouldn't you? But, no. All you get is a measly third of the page, or about six sentences on each of the two games. In-depth? There's more depth to Kate Moss's lingerie.

Having said all that though, I should point out that it is better than the first issue and there is more text to pore over, so perhaps by issue three it'll improve even further. If only the content had matched the appearance, *KRASH* would undoubtedly have been the best fanzine ever.

**Content:**  
**Appearance:**  
**Overall:**

**58%**  
**95%**  
**65%**

**REVIEW**

## Tribal Mag

PRICE: unknown

EDITOR: Martin Winter  
ADDRESS: Bruehlweg 6,  
73527 Schwaebisch Gmuend,  
Germany

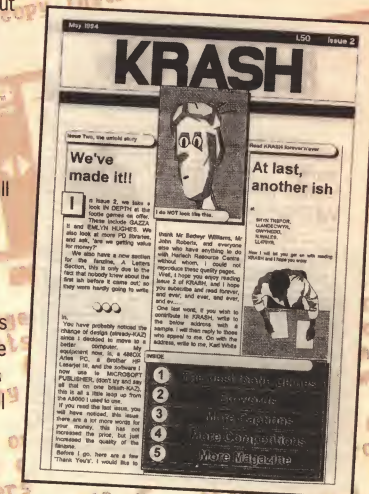
*Tribal Mag*, the latest offering to come from Germany, is yet another disc magazine. It also consists mainly of German articles, so unless you speak the lingo, you won't get that much out of it.

That's not to say you'll find it absolutely useless though, because there are some sections in English and, what's more, they're the most important bits like the news, cheats and game reviews. The menu and various prompts are all anglicised too. In other words, *Tribal Mag* contains enough English to get you around the thing easily.

The disc itself employs good graphic techniques, different music for each section and spans both sides too. The English bits may be scarce and not particularly well written, but there's quite a bit here to keep you occupied. However, I'd advise you to wait a little longer before buying *Tribal Mag*, because Martin (aka Batman of POW) is hoping the next issue will be written entirely in English. But until then, non-German speakers will find the value for money aspect a little low.

**Content:**  
**Appearance:**  
**Overall:**

**40%**  
**70%**  
**50%**





# Public Image

This month Keith Woods takes a look at the work of John Kennedy (no, not that one), and explores the future of Europe's Public Domain scene...

## Beetle Mania

By John Kennedy

'Auntie' John Kennedy is a CPC coder best known for his work with the now defunct magazine ACU. He released many games into the public domain, and we'll look at the best of them this month. He's also mad!

Well, he has to be. Only a madman could come up with a plot like this. A crowd of man-eating blobs

has invaded the Earth. Again. The blobs are heading for your town, and rather than getting out of the place as fast as you can, you, in your role as the hero of *Beetle Mania*, decide to hang around and do something about it. (More fool you!)

This is where your trusty VW Beetle comes in. You've got to travel around the town picking up the bits of a bomb that the townspeople have left hidden under flagpoles for

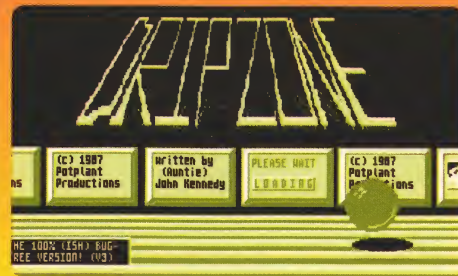
Jump into your Beetle and hunt down that bomb.

you. Okay, so you can't blow up the invading blobs with a full bomb, but you can do something that annoys them immensely: blow up the rubber ducks that they hold so dear.

There, I told you he was mad. There are four of these rubber ducks languishing in ponds at the far corners of the town. Destroy them all and you get to move on to the next level – which, strangely enough, looks exactly the same as the first one; it plays identically too – except this time the blobs are ever so slightly nastier.

Because you only ever do the same thing over and over again, *Beetle Mania* gets very boring, very quickly. It's also extremely easy. After all, there are only two blobs inhabiting the large playing area, and considering you've also got a map and blob-confusing weapon to help you out, such simplicity soon turns to tedium. In fact, if the truth be known, watching *The Open University's* probably more exciting – and just as silly too.

30%



Smooth controls, tough gameplay and it's all free – what more could you want?

## Dripzone

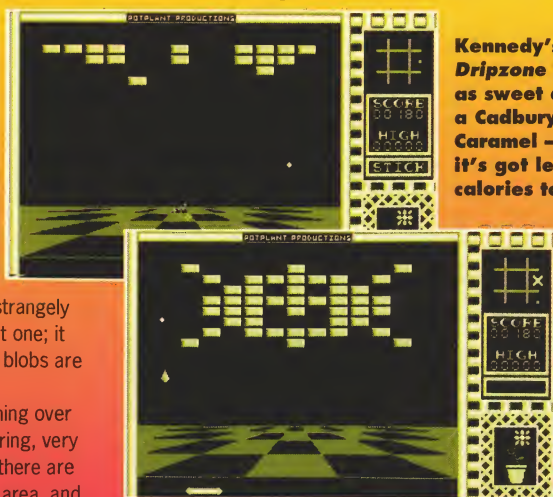
By John Kennedy

Ah, this is more like it! Not a blob in sight, just bucket-loads of gameplay in what is undoubtedly the CPC's best PD bat 'n' ball game to date.

So, what makes *Dripzone* so special? Well, first it's as well programmed as any bat 'n' ball game you're ever likely to find. The bat and ball movements are smooth and swift, so you'll need to keep your toes on. (Erm, shouldn't that be keep on your toes? – Karen)

Second, it includes a full range of features. There are loads of different well-designed levels, and a million and one different bonuses to be picked up along the way, such as an extra ball or free passage to the next level.

Third, it benefits from a highly polished presentation. The graphics and sound effects are



Kennedy's *Dripzone* is as sweet as a Cadbury's Caramel – it's got less calories too.

excellent, and there's also a special 128K version (if you can find it) that features some stunning digitised speech. The fourth, and most important thing that sets this game apart from other bat 'n' ball games is its originality. In the top-right corner of the screen is a noughts and crosses grid. Each square of the grid represents one of the nine levels of the zone. When

you win a level, a nought appears in the square. If you lose, a cross claims the space. To move on to the next zone, you've got to get three noughts in a row. If the computer gets a line of crosses, you lose and it's game over.

This adds a new dimension to an old theme. The game becomes a struggle between you and the computer. And what a struggle it is too. The difficulty curve is perfect, and the result of every game is tight. Don't get fazed if you don't win first time, though, because if you keep plugging away, you'll get there eventually.

*Dripzone* is Kennedy's best Public Domain game by a long shot. If you don't have it already, add it to your 'must have' list pronto!

82%

## Englebert

By John Kennedy

Englebert likes the look of his feet. In fact, he loves them. How do we know this? Well, why else would someone want to cover loads of 3D pyramids with his footprints? What's more, he's following this foolish fetish at risk to his own life, from... oh no, not again... the blobs.

Engle (as he's known to his mates) only has to walk over the blocks of the pyramids to leave his mark on them. However, avoiding the blobs while he's doing this is quite tricky, especially since *Englebert's* an isometric 3D game. This means pressing up sends you up and right, pressing left sends you up and left and so on – this takes some

getting used to.

If you hate these isometric type things, then you should keep well away from Engle and his feet. If not, there's a bit of fun to be had with this one. There are plenty of levels and the difficulty's pitched just right. And Engle's feet don't smell, either.

60%

With a face like that, it's no wonder he loves his feet.



## The PD year ahead

The last year hasn't been bad for Public Domain, what with the release of fun games like *Jumpmania* and *RC-Quest*, and innovative utilities such as *Digitracker* and *Octwaver*. But, as we face the New Year, the question must be asked, can 1995 live up to this year's standards?

We decided to ask Europe's 'people in the know', but they were out, so we asked someone we found sleeping in a nearby cardboard box instead. Here's a country by country guide to the future of PD.



### Britain

Probably the most prolific PD programmer in the UK at the moment is Sleepwalker PDS's Joe Moulding. He's been responsible for a whole host of great games including *Ghost Quadrant*, which we reviewed in last month's *Amstrad Action* (if you didn't get that issue, run along to

page 7 and order it now). So, what'll you be up to in '95, Joe?

'I've taken over the fanzine *CPC Undercover* and started producing issues designed on a PC. I find it difficult to resist writing a follow-up to my game *Caecilia Metella* [reviewed AA105], but I do need help and advice on what improvements I should make [anyone?]. It'll certainly have a larger playing area and cart loads of puzzles. Expect it in January.'

You can contact Joe at Sleepwalker PD, 9 Meeting House Lane, Balsall Common, Nr Coventry CV7 7FX. Another address worth noting is that of Demon PD's David Long (47 Hilton Ave, Hall Green, Birmingham B28 0PE). He's considering writing a PD word processor, but he's not sure if it's a worthwhile project. Get those pleading letters off to him now!



### Ireland

Irish group The Firm still has a product or two up its sleeve. As well as working on the freeware fanzine *CPC Forever*, Mark McCormick's New Year plans also include adding a game to the many slideshows and demos he's released in recent times. It'll be a *Dr Mario*-cum-*Tetris* type

affair, but Mark swears it has plenty of originality too. Hmm.

And what's coming up after *Battlespheres*? Well, believe it or not, Malfunxion is already planning his next production. So, what will it be, Malf?

'I'm writing a utility to re-organise your discs to make them run faster and so forth. I've also just finished my first demo, but I suppose you won't be too interested in that.'

You're right, we won't. Still, the disc utility sounds interesting – look out for a review in *Public Image* in a few months time.



### France

Despite the barrage of French-born demos and disczines, little is happening across the Channel (well, apart from the farmers buying nuclear hardware to defend their markets). However, GPA's Tom and Jerry are gallantly attempting to defend Gallic honour with two new shareware utilities, which are due for release any day now. First up, there's *Ghoul Writer*, a utility that enables you to send flashy disc letters to your CPC-owning friends. If you want to know what this one's like, just tune in next month.

String viewer (c) 1993 Antoine Pitrou & MMPF

H,B - view from selected drive  
E,F,G - select language  
ESC - quit

The almost completely useless String Viewer.

Current character set: French

Antoine from MMPF and Cabillaud! System - in en

..... the STRING VIEWER v1.1

Hello! This program allows you to view any non-pure ASCII file as well as a binary file. You can choose character sets: english, french (default) and german. The maximum length of the file is 68000=32 K, and more than 80 characters per line (else there will be some

Here are the keys to be used to view the text file:  
- space: quit and go to the menu  
- cursor keys: scroll the text up and down.  
- same + control: go top or bottom of the text.  
- P : print from the first line displayed to the end (printing).

Now here come the credits for this proggy: designed by Antoine; Crowned by a Cod... In no way the whole code and design (including this font) were stolen in the Turbo Imploder were stolen to Richard Aplin.

This product is freeware, free to copy and may be used in any way. Ansof PD (driven by TIC of Beng) is the only li in Britain and Ireland.

better examples of this type of program available. And if it didn't have quite so many silly drawbacks. As it is, it's almost completely useless.

10%

They're also working on an update for *Multi-Mark*. Quite what this utility does we're not sure, but we'll bring you more news in the near future.



### Germany

Leading the charge from the land of spicy sausages is a chap called Dreadnought, who seems to have more new Public Domain products on the way than the rest of the Germans put together.

He's been working on no less than three games, which will all be getting the Public Image treatment over the next few months. In order of interest they're *Tic-tac-toe*, *Ultimate Tetris* (not another one!) and *City Challenge*. We've seen a preview of *Ultimate Tetris*, and while it's not bad, we'll have to wait for the finished version to find out if it lives up to its name.

*City Challenge* is apparently a 'wonderful adaptation' where 'you have to destroy houses to save people.' Hmm.

Dreadnought has also been working on a handy utility to enable you to display all three modes on screen at once, in any of four sectors. It does this by using interrupts, and should be heading our way very soon now.



# MegaBlasters

With over 900K of data, *MegaBlasters* is probably the biggest game ever to blast its way on to the CPC. But does it have enough gameplaying dynamite to make it a classic? Karen Levell and Angela Cook light the fuse...



**REVIEW**

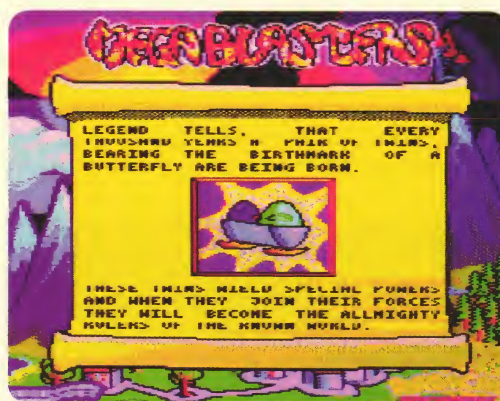
What with the termination of the Cold War, the IRA cease-fire, and the Palestinians' attempts to gain this year's Nobel Peace Prize, it's hard for long-term, dedicated terrorists to know what to do with themselves. Okay, so there's a sizeable ke-scuffle going on in Bosnia, but it's just not the same as planting bombs under your neighbours' noses. With *MegaBlasters*, however, even the most button-happy terrorist has cause to celebrate.

First off, the game is absolutely huge – we're talking Mike McShane after 17 Big Macs and four thick shakes! 900K of compressed data makes this the biggest game ever to hit the CPC (probably), and with gorgeously scrummy graphics (the whole thing's done in full overscan – so there's none of those tacky borders), dozens of in-game tunes, 11 worlds and over 90

Bombberman. And with an option that enables up to four blast-happy gamers to compete, it's more than

You're also going to be soundless if you're toting less than 128K. That aside, though, *MegaBlasters* is certainly the best game to come zinging our way in quite some time. Worth 14 quid of anybody's money. Get it!

AA



'Allmighty'? Get a dictionary!

a match for the console title.

Whether you're playing alone to beat the game creators' best scores, or dodging the bombs planted by so-called friends, *MegaBlasters* is addictiveness taken to a new high. As well as steering your Pac Man-shaped Ninja Turtle around the maze and blowing up similarly designed opponents, you also get to indulge your fetish for power-ups. There are plenty of bonuses on offer, including choice morsels that make you go faster, turn invisible and, rather nastily, reverse the controls. There's also a special secret stage – but I can't tell you about that, because it's secret...

With top guardian types to defeat, a choice of difficulty levels and a superb password feature, there really isn't much to complain about here. Well, except for the fact that it's only available on 3-inch or 3.5-inch discs – the tape deck just isn't man enough for this type of action it seems.

A hunk of burning love?



In a solo game you fight these blobby types.

levels, this game has plenty to offer even the most professional of gamers.

If you haven't already guessed from the screenshots, *MegaBlasters* is the CPC's answer to the top-selling SNES game *Super*

## Blast off!

*MegaBlasters*, which is available on both 3- and 3.5-inch discs (but not tape), costs £13.95. To get your copy send your cheque to Radical Software, 57 Lebrun Square, Kidbrooke, London SE3 9NS. Or telephone: 081 856 8402.

# Techy forum

It's time for AA's very own Claire Rayner to take the stage once more, as Richard Fairhurst answers more of your CPC's deepest personal problems.

## CPC Christmas

With Christmas on the way (and hopefully lots and lots of money with it), I am planning to treat my CPC 6128 to some upgrading. I am, however, having some trouble deciding which versions of each item to buy myself.

First off a 3.5-inch second drive. I've come to the conclusion that I have a choice of about four: Siren's, OJ Software's, SD Microsystems', and the one by Microform.

1a Which have side switches?

1b Are they all plug-in-and-go kits?

1c I may need to use the ASCII files that I produce on my 6128 on an Apple Mac. I like the idea of a side-switch, because it would let me use S-DOS, but would there be any compatibility problems with the Mac?

1d Which drive would you recommend?

I'd also like a ROM-based DOS system. S-DOS sounded great in your review in AA89, but since then ParaDOS has appeared.

2a Can ParaDOS handle both side switch and non-side switch drives?

2b Which is more user-friendly?

3 I'd like a mouse and OCP Advanced Art Studio. In what ways do the AMX mouse and the Dattel mouse differ?

4 I have noticed that WAVE sells an 'RS232 to NC100' and an 'RS232 to PC Null Modem'. Are these similar to the RS232 serial interfaces that Siren sells? If so, could I use the comms program in *Mini Office 2* or a PD program with one of them, and would it be any faster than using Siren's built-in ROM software?

5a Finally, is *Brunword Elite* still available?

5b Which has the better spell-checking function: *Brunword Elite*, *Tasword's Tas-Spell*, or *Protex*?

Claire Dunne, Pudsey

1a The SD and Microform models both have side switches.

1b They are, but remember to state that you own an original CPC 6128 when ordering. That way you won't get a 464 or Plus lead.

1c A drive with a side switch can do everything that a drive without one can do. Simply set the side switch to side A of the disc, and it acts the same as a drive without a side switch. You shouldn't, therefore, have any compatibility problems when transferring files to a Mac.

1d Go for the cheapest drive with a side switch.

2a Yes, indeed.

2b They're both pretty friendly, but ParaDOS is far more powerful. S-DOS is, to all intents and purposes, useless now that ParaDOS has come along (as well as all other versions of DOS). The only possible reason for using another version of DOS would be if you don't have a ROM-board, or you intend to use CP/M Plus a lot – this is ParaDOS's one weak point, and one which S-DOS handles particularly well.

3 The Dattel mouse is a more comfortable and altogether better-designed mouse.

4 The WAVE products are just leads to connect RS232 (serial) interfaces together. If you don't have one on your CPC already, they won't do a lot of good. However, WAVE does sell the Amstrad/Pace serial interface for £29.99, which is still your best

bet. It's compatible with almost all comms programs, and capable of working at high speeds.

Failing that, the Cirkit/Avatar model is pretty good value if you can find it second-hand. Or you could go for the Siren/KDS model, which is a passable, if inferior alternative.

Avoid Mini Office's comms module – it's absolutely abysmal, and, what's worse, won't work with most interfaces. PD programs like *Ansiterm* are far better. Bear in mind, though, that nothing except the built-in software and a modified version of CP/M comms prog *MEX* will work with the Siren/KDS interface.

5a Unfortunately, Brunning isn't advertising any more, but the ever-helpful Small Ads (making a return next month) should see you sorted.

5b *Brunword Elite*. There are a few good PD alternatives available, too. Richard

## Key largo

I recently purchased a CTM 644 from my local pawn shop. Unfortunately, I also had to take the 664 computer that went with it. Why unfortunately? Well, because the keyboard in question doesn't work. All of the proper lights come on, but only a handful of keys actually work. I know what the problem is, and I am trying to fix it with some small success. What I want to know is: are the keyboard mats the same in the 464 and 664?

Also, can the 3-inch drive be replaced with a 3.5-inch drive? I think that if it were connected directly to the board, it would. I have talked to people in the computer assembly/repair industry, but most of them

## Flash so-and-so!

Could you please explain the significance of the flashing coloured border when loading, say, a game?

For example, on Amstrad Action's covertape 39, the game *Deliverance* loads with a black-and-blue flashing border up to the level selection screen. From that point on, the border flashes red and purple, and the game won't load.

I have some other games that react in the same way, which, as you can imagine, is very frustrating. I have returned them, explaining the problems, but the replacements are just the same.

The other problem I have concerns the *Crossword Compiler*. The program won't unpack to disc – after the instruction screen, the next block loads, the tape stops, and nothing else happens. I have an expanded 464. What's going on?

Geoff Cotton, St Ives

The coloured border you mention indicates that the game in question is using a custom-loading routine, rather than the standard built-in CPC routine. Custom-loading is usually used to prevent piracy. (Interestingly, the custom loading routines are usually pirated themselves – straight out of the ZX Spectrum's ROM!) These are often less reliable than the standard loader, which explains your loading problems.

Try 'aligning your azimuth' (no, it's not rude). Just below where your tape deck opens, there is a small, square hole. Put a game tape in the



deck, press PLAY, and type CALL &BC6E to start the motor going. Now, using a watchmakers' screwdriver, adjust the tiny screw down in the depths of the hole until the clearest sound is obtained. This should improve loading no end: a tape head cleaner (available from your local hi-fi shop) might also prove useful.

Your *Crossword Compiler* troubles are due to a cock-up at this end, I'm afraid. To load it, use the revised loader from last month's covertape (RUN"UNPACK on side B). Richard

GRAPHICS 90%

The good, the bad, and the ugly all feature here.

SONICS 82%

Pretty good if you've got 128K, but deafeningly silent if you have less.

GRAB FACTOR 97%

Gets its claws in straight away, whichever way you choose to play.

STAYING POWER 98%

Make sure you have the pizza delivery number at hand when you start, because you won't want to stop for anything.

FINAL RATING 94%



don't think it would.

Steven Winter, Perth, Australia

When I bought my 664, it was at a specially reduced price because – ta da – the keyboard didn't work. Open up the machine, plug the connector back in and, hey presto, it's as good as new. If you don't have any luck with what you're doing, this connector thing might be a good component to check.

The keyboard mats are indeed the same, as long as it's the same version of 464 keyboard we're talking about (there are two). You'll be pleased to know, too, that a 3.5-inch drive will fit perfectly into your CPC. All you need to check is that you have the correct voltage for the drive and, if necessary, that it's configured as drive A. Richard

## Newies corner

I am a new 6128 owner, and I have one or two questions.

- 1 How can I link a 464 and 6128 together – I find that some tapes don't go into the 6128?
- 2 What do DES, DOS, etc mean?
- 3 Where, and from whom, would I get hold of a program that's capable of running a CD-ROM on a 6128?
- 4 I am starting to get the hang of BASIC, but I want to use machine code. Where do I begin? Is there a book or something to help me?

James Bell, Glasgow

1 Why do you want to link them together – your 464 can run 464-only games perfectly? Your 6128 can do it, of course – just run the following listing...

```
10 MEMORY &7FFF: FOR n=&8000 TO &800F
20 READ a$: POKE n,VAL("&" + a$)
30 NEXT: CALL &8000
40 DATA 21,08,80,3E,00,C3,16,BD
50 DATA 3E,C9,32,CB,BC,C3,06,C0
```

This will enable you to run games which otherwise report a 'Memory full' error.

2 If you check out this month's AA covertape, you'll see that DES stands for Desktop Environment System. This Campursoft program presents a friendly graphical front-end, just like an Apple Mac.

DOS stands for Disc Operating System. With a

CPC, this is a program that enables you to store 800K on a 3.5-inch disc. Etc stands for etcetera. 3 Sorry, no such luck.

4 One useful book is *Master Machine Code on your Amstrad CPC 464 and 664*. Despite the name, this book applies to 6128s as well. Sadly, though, it's out of print at the moment. Try following our Assembly Line series in back issues of AA (see page 7 for more details). Alternatively, an almost PD machine code tutorial by yours truly is available from Robot PD and Sheepsoft. Richard

## To boldly go

I want to print out copies of letters, documents, etc in very bold print on my Epson LX86, and I would like to know which printer codes are needed to make the printer head pass along each line of text four times or more. I can already get normal bold print (using Tasword), but I'd like the letters to be even darker.

Richard Latham, Birmingham

There are a few ways of doing this, but none of them are practical with your set-up. Tasword isn't really flexible enough to re-print each line, and returning to

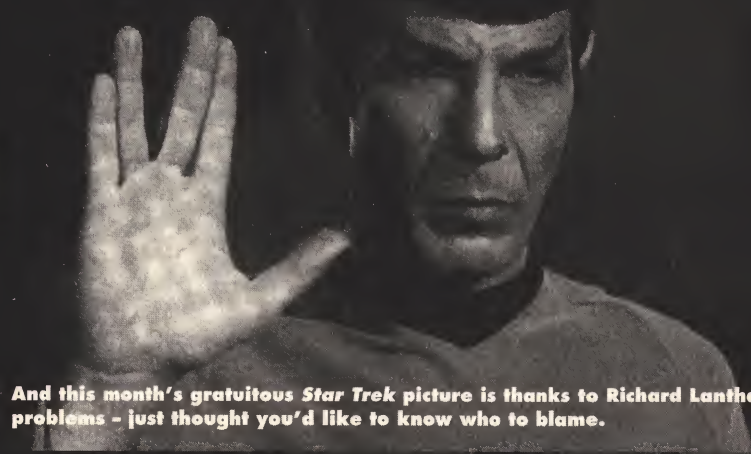
the top of the page using a reverse line-feed isn't possible on the LX86.

If you're not using near-letter quality already, turn that on. Try using the double-strike printer code, too: 27,71 to turn it on, and 27,72 to turn it off. Alternatively, save the file as ASCII, and print it by running the following BASIC program.

```
10 OPENIN "filename"
20 WHILE NOT EOF
30 LINE INPUT #9,a$
40 PRINT #9,a$;CHR$(13);
50 PRINT #9,a$
60 WEND
70 CLOSEIN
```

Line 10 opens the file ready for input. Line 30 gets one line from the file, and line 40 prints it followed by a carriage-return, but without a line feed. Line 50 prints it again, this time with both a carriage-return and a line feed, and line 60 loops back to line 20 until the end of file, at which point line 70 closes the file.

If you have a font re-definer such as the PD program Epic, you could try printing in a particularly bold font. Also, have you thought of buying a new ribbon...? Richard



And this month's gratuitous *Star Trek* picture is thanks to Richard Latham's printing problems – just thought you'd like to know who to blame.

result in HL.

Remember, too, that multiplying by 2 is very easy – add hl,hl. So is halving – or a: rr h: rr l. Consequently, multiplying or dividing by any power of 2 is just a matter of repeating these.

## Cut down to size

If you're creating text files from BASIC, and they're getting unnecessarily big, there is a way to save a bit of disc space. First of all, note that numbers

are printed with a space before and after them, the first space being replaced with a minus sign if appropriate. If you have stored 2,000 positive numbers, then, cutting out these spaces will cut the size of the file down by 4K. Here's how to output a number without spaces:

```
100 PRINT #9,MID$(STR$(n),2);
```

It is possible to save even more space by simply outputting values as their ASCII codes – character 243 takes up one byte, the string '243' takes up three – but this will cause you problems should you output the numbers 10, 13 or 26, as these will be misinterpreted as line feed, carriage return and end-of-file respectively. To be avoided.

# Top Tips

## X/5 + Z80 = HEADACHE

Machine code is good for a lot of things.

(Well, actually, machine code is good for one thing only, and that's writing fast programs, but that's really beside the point.) It's not very good at arithmetic – adding and subtracting numbers is about its limit. It can't even cope with simple multiplication and division.

Techy Forum, on the other hand, can (it learnt about them at school this morning). First up: a subroutine to divide HL by BC, returning the (rounded) result in DE...

```
.divide ld de,0
.div_lp or a: sbc hl,bc: jr c,.div_ad
inc de: ret z
jr .div_lp
```

```
.div_ad add hl,bc
or a: rr b: rr c
or a: sbc hl,bc
ret c: inc de: ret
```

'What about multiplication?' I hear you cry – or rather, I would if you were currently standing outside my door and you didn't have a particular aversion to horrible clichés. Well, fret no longer, because here's the answer to all your prayers (reader of delicate disposition promptly commits suicide)...

```
.multi ld hl,0
.mul_lp ld a,b: or c: ret z
jr .mul_lp
```

This one multiplies DE by BC, and returns the

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